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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/584,161
Filing Date: March 29, 2007
Appellant(s): EBERLE ET AL.

Andre Pallapies
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/29/10 appealing from the Office action mailed 6/3/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 7-10 and 12-28 are pending and stand rejected in this application.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

FR 1,516,944	Electrogerate	1-1967
2002/0184911 A1	Dobson et al.	12-2002
4,147,037	Gelbard et al.	4-1979
5,269,158	Bitter et al.	12-1993
EP 0788860 A1	Nocivelli	8-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7-10 and 12-14, 19, 20, 22, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Electrogerate FR Publication No. 1,516,944 and further in view of Dobson et al. US Publication No. 2002/0184911 A1.

Regarding claim 7, Electrogerate teaches in fig. 11, a refrigerating unit comprising a suction tube 41, 42 and a throttling tube 43 which runs at least over a part of its length inside the suction tube 41, 42 and is guided out from the suction tube 41, 42 to form a first outlet location 44 wherein the throttling tube 43 and the suction tube 41, 42 are joined to one another at a second location 45 of the suction tube 41, 42 at which outer surfaces of the throttling tube 43 and the suction tube 41, 42 are in contact, wherein the outer surfaces of the throttling tube 43 and the suction tube 41, 42 are joined to one another at the second location 45 by welding (pg. 4 paragraph 7). Electrogerate does not explicitly teach where the weld at the second location is an ultrasound weld.

However, Dobson teaches the functional equivalence of a number of means for bonding, including ultrasound welding, tubes of an accumulator in an air conditioning system (paragraph 48 lines 1-8). Ultrasonic welding is particularly advantageous because it is well known in the art to be a fast method of adhering elements with a short drying time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Electrogerate with the teachings of Dobson to include ultrasound welding in order to provide an adhering method that is much faster than conventional adhesives of solvents. The fast drying time prevents the adhered pieces from remaining in a jig for a long period of time, waiting for the joint to dry or cure. This welding type is also easily automated, making clean and precise joints. Furthermore, as evidenced by Matsubara (US Patent No. 6,827,753 B2), who discloses in figures 1 and

6, two tubes (14 and tube encasing valve 48) being connected together at fitting portion 30 through the use of ultrasound welding (column 4 lines 50-53). It is as best understood that the tubes are metallic tubes due to the cross hatching of the tubes as shown in figure 1. Furthermore, it is interpreted that they are metallic tubes since this gas and liquid separator is used to separate oil from gas coming out of a combustion chamber in automobile, wherein the tubes must withstand extremely high temperatures due to the high temperature of the gas being discharged from the combustion chamber.

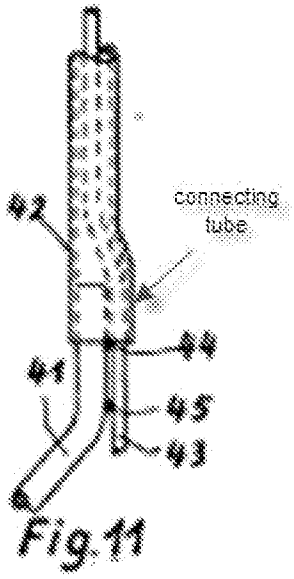

Fig.11

Regarding claim 8, Electrogerate as modified above teaches the invention as disclosed and further teaches in fig. 11 that the first and second locations, 44 and 45

are spaced apart at a distance. Electrogerate fails to explicitly teach where the second location is spaced apart from the first location at a range of 5mm to 20mm. Since Electrogerate discloses according to figure 11, a distance between the first location and the second location, this distance is recognized as a result effective variable, i.e. a variable which achieves a recognized result. In this case the recognized result is that with this distance between the first and second locations, the throttling tube has less of a chance of becoming damaged during an installation process. This specific distance of 5-20mm will increase the rigidity of the throttling tube, which will prevent damage to the tubes by over flexing during an installation process. Therefore, since the general condition of the claim, i.e. that there is a distance between the first and second locations, was disclosed in the prior art by Electrogerate, it is not inventive to discover the optimum workable range by routine experimentation and it would be obvious to one of ordinary skill in the art at the time of invention to provide the tube as disclosed by Electrogerate with a distance of 5-20mm between the first and second location.

Regarding claim 9, Electrogerate as modified above teaches the invention as disclosed and further teaches in fig. 11 wherein the second location 45 is located downstream from the outlet location 44 with reference to the refrigerant flowing in the suction tube 41, 42.

Regarding claim 10, Electrogerate as modified above teaches the invention as disclosed and further teaches in fig. 11, wherein the outlet location 44 is provided at a

connecting tube (see annotated figure above) on which both the suction tube 41, 42 and the throttling tube 43 are fixed downstream in a liquid and gastight manner (pg. 4 paragraph 7). Electrogerate discloses that the tubes are brazed and welded at the locations 44 and 45. Therefore, the tubes are fixed in a liquid and gastight manner. From figure 11, the outer wall of tubes 41 and 43 are in contact with the inner wall of tube 42 (indicated by a dashed line). Since both tubes 41 and 43 are in contact with the inner wall (dashed line) they are considered to be fixed in a liquid and gastight manner. A person of ordinary skill in the art would have known to fix the suction tube and the throttling tube downstream in a liquid and gastight manner so that refrigerant does not leak out of the refrigerating unit and into the surrounding environment. Refrigerants can be toxic, and can contaminate the surrounding area of the refrigerating unit, creating a dangerous health environment to a person near the unit.

Regarding claim 12, Electrogerate teaches in fig. 11, a method for joining a suction tube of a refrigerating unit to a throttling tube comprising the following acts, guiding the throttling tube 43 out from the inside of the suction at an outlet location 44 of the suction tube 41, 42, joining the suction tube 41, 42 and the throttling tube 43 at the outlet location, bringing in contact an outer surface of a portion of the throttling tube 43 located outside the suction tube 41, 42 with an outer surface of the suction tube 41, 42 at a second location 45 of the suction tube 41, 42, joining the suction tube 41, 42 and the throttling tube 43 at the second location 45, joining the outer surfaces of the suction tube 41, 42 and the throttling tube 43 to one another at the second location 45 by

welding (pg. 4 paragraph 7). Regarding the joining of the suction tube and the throttling tube at the outlet location by soldering, Electrogerate teaches an equivalent technique of brazing which allows both the tubes to become joined together by the use of a filler metal which melts and creates a sealed joint. Both brazing and soldering use a filler metal that melts and creates a sealed joint without the melting of the surfaces that are being joined. Electrogerate fails to explicitly teach the use of ultra sound welding.

However, Dobson teaches the functional equivalence for a number of means of bonding, including ultrasound welding tubes of an accumulator in an air conditioning system (paragraph 48 lines 1-8). Ultrasonic welding is particularly advantageous because it is well known in the art to be a fast method of adhering elements with a short drying time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Electrogerate with the teachings of Dobson to include ultrasound welding in order to provide an adhering method that is much faster than conventional adhesives of solvents. The fast drying time prevents the adhered pieces from remaining in a jig for a long period of time, waiting for the joint to dry or cure. This welding type is also easily automated, making clean and precise joints. Furthermore, as evidenced by Matsubara (US Patent No. 6,827,753 B2), who discloses in figures 1 and 6, two tubes (14 and tube encasing valve 48) being connected together at fitting portion 30 through the use of ultrasound welding (column 4 lines 50-53). It is as best understood that the tubes are metallic tubes due to the cross hatching of the tubes as shown in figure 1. Furthermore, it is interpreted that they are metallic tubes since this

gas and liquid separator is used to separate oil from gas coming out of a combustion chamber in automobile, wherein the tubes must withstand extremely high temperatures due to the high temperature of the gas being discharged from the combustion chamber.

Regarding claim 13, Electrogerate as modified above teaches the invention as disclosed and further teaches in fig. 11 that the first and second locations, 44 and 45 are spaced apart at a distance. Electrogerate fails to explicitly teach where the second location is spaced apart from the first location at a range of 5mm to 10mm. Since Electrogerate discloses according to figure 11, a distance between the first location and the second location, this distance is recognized as a result effective variable, i.e. a variable which achieves a recognized result. In this case the recognized result is that with this distance between the first and second locations, the throttling tube has less of a chance of becoming damaged during an installation process. This specific distance of 5-10mm will increase the rigidity of the throttling tube, which will prevent damage to the tubes by over flexing during an installation process. Therefore, since the general condition of the claim, i.e. that there is a distance between the first and second locations, was disclosed in the prior art by Electrogerate, it is not inventive to discover the optimum workable range by routine experimentation and it would be obvious to one of ordinary skill in the art at the time of invention to provide the tube as disclosed by Electrogerate with a distance of 5-10mm between the first and second location.

Regarding claims 14 and 22, Electrogerate as modified above teaches the invention as disclosed and Electrogerate further teaches in fig. 11, the suction tube 41, 42 and the throttling tube 43 are made of metal materials. It is implicitly taught that the suction tube and throttling tube are made of metal materials, as refrigeration system use metal piping such as copper to carry the refrigerant throughout the system. Furthermore, the applicant admits on page 3 of the arguments that Electrogerate teaches that the suction and throttling tube are usually made of metal materials.

Regarding claims 19 and 26, Electrogerate as modified above teaches the invention as disclosed and Electrogerate further teaches in fig. 11, the suction tube 41, 42 has a specific diameter and the throttling tube 43 has a specific diameter. Electrogerate fails to explicitly teach the suction tube has a diameter of a few millimeters and the throttling tube has a diameter of fractions of a millimeter. Since Electrogerate discloses according to figure 11, a specific diameter of both the suction and throttling tube, this diameter is recognized as a result effective variable, i.e. a variable which achieves a recognized result. In this case the recognized result is that with this diameter of the suction and throttling tube, the tubes will have a lower manufacturing cost, since less material will be needed to make the tubes. This specific diameter of a few millimeters of the suction tube and fractions of a millimeter of the throttling tube will decrease the overall cost of the refrigeration system. Therefore, since the general condition of the claim, i.e. that a specific diameter of both the suction and throttling tube, was disclosed in the prior art by Electrogerate, it is not inventive to discover the

optimum workable value by routine experimentation and it would be obvious to one of ordinary skill in the art at the time of invention to provide the tubes as disclosed by Electrogerate with a diameter of a few millimeters and fractions of a millimeter.

Regarding claims 20 and 27, Electrogerate as modified above teaches the invention as disclosed and Electrogerate further teaches in fig. 11, each of the suction tube 41, 42 and the throttling tube 43 has an interior diameter surface defining a passage for refrigerant, and an outer diameter surface which together defines a wall thickness therebetween, the suction tube and the throttling tube being aligned in side by side relation such that their longitudinal axes are substantially parallel, whereby at least along a portion 45 of the lengths thereof, the welded joint is located at said portion to weld the outer diameter surface of the throttling tube 43 to the outer diameter surface of the suction tube 41, 43. Once Electrogerate is modified by Dobson, an ultrasonic weld will be located at said portion 45 to weld the outer diameter surface of the throttling tube to the outer diameter surface of the suction tube, Since Dobson was used to teach the technique of ultrasonic welding.

Claims 14, 15, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Electrogerate and Dobson as applied to claims 7 and 12 above, and further in view of Gelbard et al. US Patent No. 4,147,037.

Regarding claims 14 and 22, Electrogerate as modified above teaches the invention as disclosed and further teaches in fig. 11, wherein the suction tube 41, 42

and the throttling tube 43 are made of metal materials. However, assuming arguendo that the applicant disagrees that the metal materials are disclosed, Gelbard teaches a refrigeration system with a suction tube and a throttling tube that are made of metal materials (column 1 lines 42-59). By making the suction tube and throttling tube out of metal materials rather than a polymer or plastic material, the lifespan of the tubes will be increased, as metal is a well known material that can handle extreme hot and cold temperatures and thermal expansion and contraction without damage being caused to the tubes.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Electrogerate and Dobson with the teachings of Gelbard to include a suction tube and a throttling tube that are made of metal materials in order to increase the lifespan of the suction and throttling tubes, resulting in lower maintenance costs of the refrigeration system. The metal material will be able to withstand the extreme hot and cold temperature within the refrigeration system from the refrigerant as well as withstand thermal expansion and contraction without damage being caused to the suction and throttling tube.

Regarding claims 15 and 23, Electrogerate as modified above teaches the invention as disclosed and Gelbard further teaches the metal materials (for the suction and throttling tube) include copper (column 1 line 68-column 2 line 3).

Claims 16-18, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Electrogerate and Dobson as applied to claims 7 and 12 above, and further in view of Bitter et al. US Patent No. 5,269,158.

Regarding claim 16, Electrogerate as modified above teaches the invention as disclosed and Electrogerate further teaches in fig. 11, the suction tube 41, 42 and the throttling tube 43 are fixed at the first outlet location 44. Electrogerate as modified fails to explicitly teach the tubes being fixed at the first outlet location by a soldering joint.

Bitter teaches in fig. 1, the technique of attaching refrigerant tubing 10 to an evaporator 1 by using a soldering joint 16. The use of soldering is well known in the art and has the advantage of a low cost, high strength joint that will not cause the surfaces being joined together to melt, as soldering is not an intense high heat process.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Electrogerate and Dobson with the teachings of Bitter to include the technique of soldering, that would allow the tubes to be fixed at the first outlet location with a soldering joint in order to lower the costs of manufacturing of the refrigeration system, as soldering is a low cost and efficient process that can be used to connect refrigerant tubing together. Furthermore, soldering will prevent burn through damage to the refrigerant tubing during the manufacturing process, as soldering does not require extreme heat.

Regarding claims 17 and 24, Electrogerate as modified above teaches the invention as disclosed but fails to explicitly teach an evaporator having a refrigerant tube into which the throttling tube is inserted.

Bitter teaches in fig. 4, an evaporator 1 having a refrigerant tube 2 into which a throttling tube 7 is inserted. Allowing the throttling tube to be inserted into the refrigerant tube directly in the evaporator will increase the efficiency of the evaporator, as refrigerant is expanded and discharged immediately into the evaporator. Heat losses will be at a minimum, since the cold refrigerant is not passing through additional piping before entering the evaporator.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Electrogerate and Dobson with the teachings of Bitter to include an evaporator having a refrigerant tube into which the throttling tube is inserted in order to increase the efficiency of the refrigeration system, as expanded refrigerant is immediately discharged into the evaporator, allowing the temperature of the evaporator to be lower. This will allow the system to be used in applications where high heat loads are constantly in demand.

Regarding claims 18 and 25, Electrogerate as modified above teaches the invention as disclosed and Bitter further teaches in fig. 4, a connecting section 4 into which the refrigerant from the refrigerant tube 2 may be discharged and through which the throttling tube 7 is guided and positioned.

Claims 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Electrogerate and Dobson as applied to claims 7 and 12 above, and further in view of Nocivelli EP Publication No. 0788860 A1 and Bitter.

Regarding claims 21 and 28, Electrogerate as modified above teaches the invention as disclose and Electrogerate further teaches in fig. 11, the suction tube 41, 42 includes first and second portions 41, 42, the first portion 41 being inserted into the second portion 42 to define an overlapping portion, the overlapping portion between the first and second portions being joined. Electrogerate as modified by Dobson fails to explicitly teach the overlapping portion between the first and second portions being joined by a first soldering joint and the suction tube being welded to the throttling tube at a second soldering joint.

Nocivelli teaches in fig. 5, a first portion 3' of a suction tube being inserted into a second portion (See annotated figure below) of the suction tube, an overlapping portion (See annotated figure below), the overlapping portion between the first and second portions being joined by a first joint (see annotated figure below) and the suction tube being joined to a throttling tube 5 at a second joint (see annotated figure).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Electrogerate and Dobson with the teachings of Nocivelli to include an overlapping portion between the first and second portions being joined by a first joint and the suction tube being joined to the throttling tube at a second joint in order to increase the rigidity of the refrigerant tubing assembly. By adding the first and second joints, the tubes will become more rigid, preventing the

tubing assembly from becoming damaged during installation of the tubing into the refrigeration system. Electrogerate as modified by Dobson and Nocivelli fails to explicitly teach the first and second joint are soldering joints.

Bitter teaches in fig. 1, the technique of attaching refrigerant tubing 10 to an evaporator 1 by using a soldering joint 16. The use of a soldering is well known in the art and has the advantage of a low cost, high strength joint that will not cause the surfaces being joined together to melt, as soldering is not an intense high heat process.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Electrogerate, Dobson and Nocivelli with the teachings of Bitter to include the technique of soldering, that would allow the first and second portions to be joined by a first soldering joint and the suction tube being welded to the throttling tube at a second soldering joint in order to lower the costs of manufacturing of the refrigeration system, as soldering is a low cost and efficient process that can be used to connect refrigerant tubing together. Furthermore, soldering will prevent burn through damage to the refrigerant tubing during the manufacturing process, as soldering does not require extreme heat.

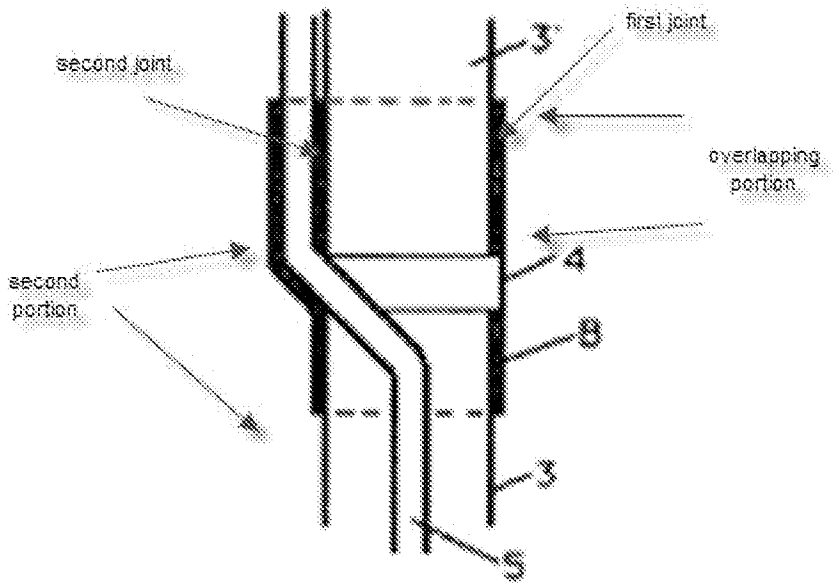

FIG.5

(10) Response to Argument

FIRST GROUND OF REJECTIONI

The appellant argues that there is no motivation to combine the teachings of Electrogerate and Dobson. However this should not be found persuasive because Dobson teaches a number of means for bonding including ultrasound welding tubes of an accumulator in an air conditioning system. It was further stated that a person of ordinary skill in the art at the time of invention would have included the teachings of Dobson with the teachings of Electrogerate in order to provide an adhering method that is much faster than conventional adhesives or solvents. The fast drying time prevents the adhered pieces from remaining in a jig for long periods of time and furthermore this

welding type is also easily automated making clean and precise joints. The appellant further argues that since Electrogerate is directed towards domestic refrigerators with a suction and throttling tube and Dobson being directed towards a one piece U-tube absorbent unit for an automobile air conditioning system, there would be no reason for one of ordinary skill in the art to adopt the teachings of Dobson. This should not be found persuasive because Dobson is disclosing the use of ultrasound welding on tubes for the purpose of bonding wherein both references disclose the use of bonding methods on refrigerant tubes in refrigeration systems. The appellant further argues that Dobson teaches the use of ultrasonic welding in conjunction with two plastic half pipe sections, there being no evidence that would suggest the plastic ultrasonic welding technique to be beneficial to the Electrogerate reference. This should not be found persuasive because Dobson also discloses in paragraph 52 that the tubes are not limited to plastic, and that a metal U-tube can also be used. This is being interpreted that the ultrasound welding technique is still being applied to a metal tube, furthermore, as noted and evidenced above in the rejection of claim 7, Matsubara was used to show the technique of using ultrasonic welding for the connection of two metal tubes. The appellant further argues again that one of ordinary skill in the art knowing to use the technique of ultrasound welding is insufficient to support a prima facie case of obviousness. However, as noted above, the advantage of faster drying time and having an easily automated process would still apply to the Electrogerate reference for why a person of ordinary skill in the art would look to the Dobson reference for the teaching of ultrasound welding.

SECOND GROUND OF REJECTION

The appellant further argues that with regards to claims 7 and 12, Dobson includes no suggestion to use ultrasonic welding to join outer surfaces of the throttling tube and the suction tube. However, this should not be found persuasive because as noted above in the rejection of claim 7, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Electrogerate with the teachings of Dobson to include ultrasound welding in order to provide an adhering method that is much faster than conventional adhesives of solvents. The fast drying time prevents the adhered pieces from remaining in a jig for a long period of time, waiting for the joint to dry or cure. This welding type is also easily automated, making clean and precise joints. Furthermore, Electrogerate already teaches the joining of outer surfaces of the throttling tube and the suction tube, however lacks the teaching of ultrasound welding. This is why Dobson is being utilized for the teaching of ultrasound welding, that is being applied to the joining of the throttling tube and suction tube of Electrogerate. It has been held that one cannot show non-obviousness by attacking references individually where, as here the rejection is based on combinations of references. The appellant further argues that Dobson does not teach the ultrasonic welding of two tubes, rather two plastic pieces that make up a single U-shaped conduit. However as noted above, Electrogerate already discloses the connecting of two tubes but uses soft welding instead of ultrasonic welding. The combination of the Electrogerate and Dobson references meet the limitations of the claims. The applicant again further argues the Dobson does not teach the technique of using ultrasonic welding metal. This should not

be found persuasive because as stated above, Dobson also discloses in paragraph 52 that the tubes are not limited to plastic, and that a metal U-tube can also be used, wherein this is interpreted to mean that there are two metal pieces that make up the U-tube wherein they are joined by ultrasound welding. This is also being interpreted that the ultrasound welding technique is still being applied to a metal tube, however, as also noted and evidenced above in the rejection of claim 7, Matsubara was used to show the technique of using ultrasonic welding for the connection of two metal tubes. Lastly the appellant again argues that even if Dobson were to teach ultrasonic welding of metal half pipes, it still does not teach ultrasonic welding of outer surfaces of suction and throttling tubes. However as stated above, Electrogerate teaches the use of soft welding at the second location instead of an ultrasonic weld. Dobson is being used to teach the technique of ultrasonic welding and its advantages, not the use of an ultrasonic weld at a second location to join both a suction and throttling tube. It has been held that one cannot show non-obviousness by attacking references individually where, as here the rejection is based on combinations of references.

THIRD GROUND OF REJECTION

The appellant further argues that Electrogerate and Dobson do not teach the use of both a solder joint and an ultrasonic joint. This should not be found persuasive because as stated above in the rejection of claim 12, Electrogerate teaches an equivalent technique of soldering at the outlet location, by using the technique of brazing. A person of ordinary skill in the art at the time of invention would have known

that the technique of brazing is a functional equivalent of soldering. Electrogerate failed to explicitly teach the joining of the outer surfaces of the suction tube and the throttling tube at the second location by ultrasound welding, however, Dobson was used to show why a person of ordinary skill in the art would want to use an ultrasonic weld at the second location of Electrogerate. The appellant further argues that neither Electrogerate nor Dobson has any suggestion to use two different types of weldings or joints to fasten the throttling tube to the suction tube. This should not be found persuasive because Electrogerate discloses in figure 11, two types of joints, a brazed induction and a soft weld for joining the suction tube to the throttling tube. When Dobson is combined with the teachings of Electrogerate, the joint at the first location will be a brazed induction and the joint at the second location will be an ultrasonic weld. The appellant then argues that if Dobson were adapted into Electrogerate, ultrasonic welding would be used at both locations, not just one location. However, the Dobson reference was intended to be used to create an ultrasonic weld at the second location in order to provide an adhering method that is much faster than conventional adhesives or solvents. Furthermore, since Electrogerate already discloses a weld at the second location, a person of ordinary skill in the art would have known to replace the soft weld as disclosed with an ultrasonic weld as disclosed by Dobson. The appellant argues that having an ultrasonic weld only at the second location amounts to impermissible hindsight, however this should not be found persuasive because it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which

was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

FOURTH GROUND OF REJECTION

The appellant further argues that the examiner has not established that the parameters of claims 8, 13, 19 and 26 are a result of effective variables. This should not be found persuasive because as stated above, each parameter has been determined as a result effective variable, since Electrogerate disclosed that a distance exists between the first and second locations and that the suction tube and the throttling tube have a defined diameter. It was also stated that it is not inventive to discover the optimum workable range by routine experimentation and it would have been obvious to one of ordinary skill in the art at the time of invention to provide the specific distance of the first and second location as well as the diameters of the suction and throttling tube, and therefore the grounds of rejection should still remain.

FIFTH GROUND OF REJECTION

The appellant further argues that claims 14 and 22 specify that the suction and throttling tubes are metal materials and that Dobson simply provides no teaching to ultrasonically weld the outer surfaces of two metal material tubes to one another. This should not be found persuasive because as stated under the rejection of claims 14 and 22, it is implicitly taught that the suction tube and throttling tube are made of metal

materials, as refrigeration systems use metal piping such as copper to carry the refrigerant throughout the system. When Dobson is combined with Electrogerate, an ultrasonic weld would be provided at the second location of Electrogerate. Furthermore, as evidenced by Matsubara above, it is known to use the technique of ultrasonic welding to connect or join two metallic tubes together.

SIXTH GROUND OF REJECTION

The appellant further argues with regards to claim 16 that Electrogerate and Dobson do not teach the use of both a solder joint and an ultrasonic joint, however Bitter was used to show the technique of soldering on a refrigerant tube to an evaporator and why this would have been obvious to a person of ordinary skill in the art to use soldering on the tubes at the first outlet location. Furthermore, again the appellant argues that there is no teaching in Electrogerate or Dobson for using two different types of welding or joints to fasten the throttling tube to the suction tube. This should not be found persuasive because Electrogerate discloses in figure 11, two types of joints, a brazed induction and a soft weld for joining the suction tube to the throttling tube. When Dobson is combined with the teachings of Electrogerate, the joint at the first location will be a brazed induction and the joint at the second location will be an ultrasonic weld. The appellant then argues that if Dobson were adapted into Electrogerate, ultrasonic welding would be used at both locations, not just one location. However, the Dobson reference was intended to be used to create an ultrasonic weld at the second location in order to provide an adhering method that is much faster than

conventional adhesives or solvents. Furthermore, since Electrogerate already discloses a weld at the second location, a person of ordinary skill in the art would have known to replace the soft weld as disclosed with an ultrasonic weld as disclosed by Dobson. The appellant argues that having an ultrasonic weld only at the second location amounts to impermissible hindsight, however this should not be found persuasive because it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/J. K./
Examiner, Art Unit 3744
6 January 2011

Conferees:

/Cheryl J. Tyler/
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